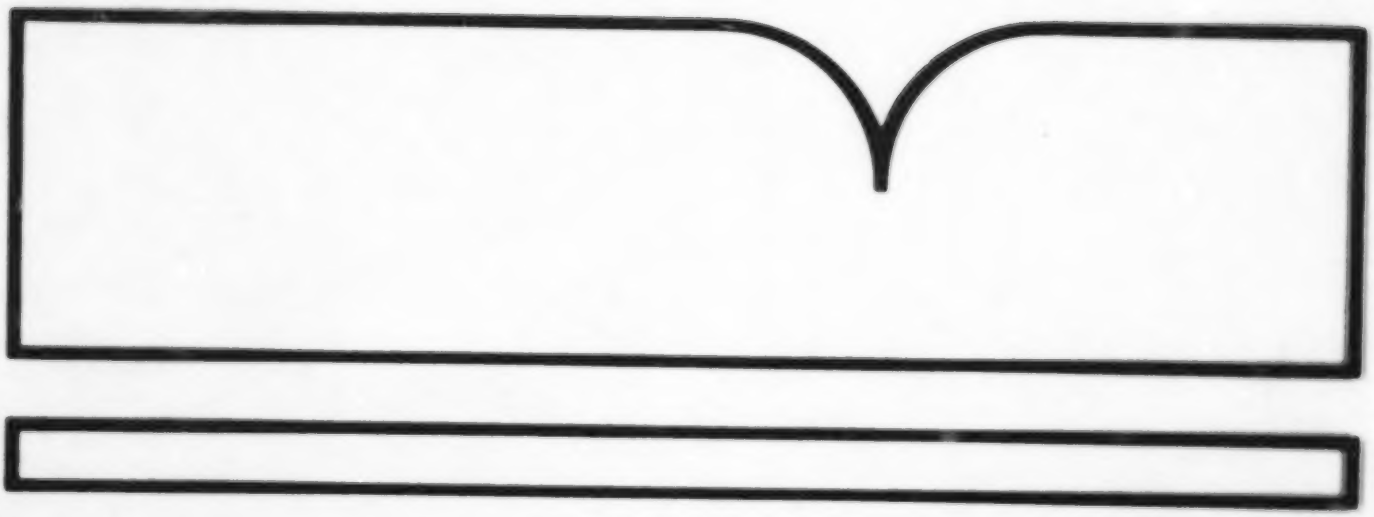
PB87-115143

Pesticide Fact Sheet Number 58: Ethalfluralin

(U.S.) Environmental Protection Agency
Washington, DC

30 Jun 85



U.S. Department of Commerce
National Technical Information Service
NTIS

50 277 -101

REPORT DOCUMENTATION PAGE	1. REPORT NO.	2.	PB87-115143
4. Title and Subtitle: EPA Pesticide Fact Sheets - ETHALFLURALIN No. 58			5. Report Date: Issued 6/30/85
			6.
7. Author(s): EPA, Office of Pesticide Programs, Registration Division			8. Performing Organization Rept. No.: 540/FS-87- 057
9. Performing Organization Name and Address: US Environmental Protection Agency Office of Pesticide Programs Registration Division, TS-767C 401 M Street, S.W. Washington, D.C. 20460			10. Project/Task/Work Unit No. 11. Contract(C) or Grant(G) No. (C) (G)
12. Sponsoring Organization Name and Address: Same as #9			13. Type of Report & Period Covered 14.

15. Supplementary Notes

16. Abstract (Limit: 200 words)

This document contains up-to-date chemical information, including a summary of the Agency's regulatory position and rationale, on a specific pesticide or group of pesticides. A Fact Sheet is issued after one of the following actions has occurred.

1. Issuance or reissuance of a registration standard,
2. Issuance of each special review document,
3. Registration of a significantly changed use pattern,
4. Registration of a new chemical, or
5. An immediate need for information to resolve controversial issues relating to a specific chemical or use pattern.

17. Document Analysis a. Descriptors

Pesticides, regulations, Chemical Information Fact Sheet, Use Patterns, Science Findings

b. Identifiers/Open-Ended Terms

c. COSATI Field/Group

REPRODUCED BY
U.S. DEPARTMENT OF COMMERCE
NATIONAL TECHNICAL
INFORMATION SERVICE
SPRINGFIELD, VA. 22161

18. Availability Statement: Publicly Available	19. Security Class (This Report): Unclassified	21. No. of Pages: 3
	20. Security Class (This Page): Unclassified	22. Price

United States
Environmental Protection
Agency

Office of Pesticides and Toxic Substances
Office of Pesticide Programs (TS-766C)
Washington, DC 20460

EPA

Pesticide Fact Sheet

Name of Chemical: Ethalfluralin
Reason for Issuance:
Date Issued: June 30, 1985
Fact Sheet Number: 58

1) Description of Chemical

Generic Name: N-ethyl-N-(2-methyl-2-propenyl)-2,6-dinitro-4-(trifluoromethyl) benzenamine

Common Name: ethalfluralin

Chemical Abstracts Service (CAS) number:

Year of initial registration: 1983

Pesticide type: herbicide

U.S. producer: Elanco Products Co., Division of Eli Lilly & Co.

2) Use Patterns and Formulations

Emulsifiable concentrate: pre-plant incorporated (PPI) to dry peas, dry beans, soybeans

surface applied, cucurbits direct seeded: cantaloupe, cucumber, pumpkin, watermelon

3) Summary of Science Findings

Chemical Characteristics (From Elanco General Summary 161/ZGSUm1/AM/1)

Ethafluralin is a yellow crystalline solid with a faint amine odor. It has a molecular weight of 333.3, a specific gravity of 1.32/ml, a melting range of 57 to 59°C, an n-octanol-to-water partition coefficient of 5-11, a vapor pressure of 8.2×10^{-5} mmHg at 25°C, and is susceptible to decomposition by ultraviolet light. Ethalfluralin is readily soluble in organic solvents; its solubility in water is 0.3 ppm at 25°C.

Toxicological characterisitics:

Ethalfluralin is considered a skin sensitizer.
E.C. formulation is irritating to the eyes and skin.
E.C. formulation is toxic to fish.
Toxicology studies on ethalfluralin are as follows:

Oral LD_{50}, rat: greater than 10g/kg
Oral LD_{50}, mouse: " " 10g/kg
Oral LD_{50}, dog: greater than 200 mg/kg
Oral LD_{50}, cat: " " 200 mg/kg

Acute dermal LD_{50}, rabbit: greater than 2 gm/kg
Primary eye irritation, rabbit: conjunctivitis; no corneal irritation
Acute inhalation LC_{50}, rat: greater than 0.028 mg/L/hour

Toxicology studies on E.C. formulation are as follows:
Oral LD_{50}, rat: greater than 2mL/kg
Acute dermal LD_{50}, rabbit: greater than 2mL/kg
Primary dermal irritation, rabbit: slight to moderate irritation
Primary eye irritation, rabbit: slight iritis & conjunctivitis; corneal dulling reversible in 21 days
Acute inhalation LC_{50}, rat: greater than 74.4 uL/L/hour

Ethalfluralin is oncogenic in the rat: mammary gland fibroadenomas (benign) in females at mid (250) and high (750) ppm dose levels. Using a "one-hit" model, the worst-case dietary oncogenic risk is calculated to be 3.77 incidences in one million.

Ethalfluralin is considered a teratogen in the rabbit: teratogenic No-observed-effect level (NOEL) is 75mg/kg

Environmental Characteristics

Ethalfluralin binds readily to soil particles and is, thus, not prone to leaching. It is volatile and readily photodegraded. Ethalfluralin concentrations in water would be expected to decline rapidly with a half-life of 1-2 days. Ethalfluralin residues may transport to aquatic environments via soil erosion. Label warnings include: Do not apply directly to any body of water or wetlands. Runoff or erosion from treated areas may be hazardous to fish in neighboring areas.

Ecological Characteristics:

Avian acute oral LD_{50}: Bobwhite quail > 2000 mg/kg
Avian dietary LC_{50}: Bobwhite quail > 5000 ppm
Avian dietary LC_{50}: Mallard duck > 5000 ppm
Fish acute LC_{50}: Bluegills: 0.032 ppm (highly toxic)
Rainbow trout: 0.037 ppm (highly toxic)
Aquatic invertebrate acute LC_{50}: Daphnia: 0.365 ppm (highly toxic)
mallard and bobwhite one-generation reproduction: supplementary dietary levels up to 1000 ppm did not affect reproduction.

Tolerance assessment:

Tolerance levels of 0.05 ppm established for parent compound ethalfluralin in commodities: dry beans, dry peas, soybeans and cucurbit vegetable group. Real residues of ethalfluralin detectable in forage items, thus label restriction: Do not graze or forage crop grown in treated soil or cut for hay or silage.

Summary of Regulatory Position and Rationale

Ethalfluralin is regulated as an oncogen and teratogen. Benefits associated with registered crop uses are considered to outweigh oncogenic risks. There are adequate margins of safety for teratogenic effects. Analysis of benefits and risks is provided in an Agency position document accompanying the tolerance regulation published December 21, 1983, in the FR for this pesticide.

Summary of major data gaps

Chronic non-rodent feeding (dog)
Teratology: second species